

well, bowels regular. While the compresses were held in their places by the hands of an assistant, the front part of the bandage was removed, and the stitches which had begun to cause some ulceration around them were removed. Union by the first intention had taken place throughout. The bandage was replaced and the dressings worn four days longer, when they were thrown aside altogether; the lip having become entirely healed, to the great gratification of the child's afflicted parents. And now, one month after the operation, the deformity arising from the projection of the middle portion of the upper jaw is very slight; the upper and under lips shut together well; one of the upper incisor teeth have appeared and takes a good direction, and the fissures in the roof of the mouth have so far closed that very little food or drink now passes into his nostrils. The child is so young that the external scars will show but little after a few years.

I have had two principal objects in view in publishing the above case. 1. To add another fact to the already abundant testimony, that the use of pins or the twisted suture, which I find is still extensively practised in this country, is unnecessary even in the worst forms of hare-lip; and that the common interrupted suture is simpler, causes less irritation, is less liable to accidents, and is equally safe and effectual. 2. That it is not always best, particularly in bad cases, to delay operating until the child is one or two years old, as recommended by many. If the ease detailed above had been neglected until the bones composing the roof of the mouth and jaw, had become dense and ossification complete, it would have been wholly impossible to so far reduce the projecting portion of the jaw, as to render its appearance even tolerable.

ART. VII.—*Cases of Injury of the Head.* By A. B. SHIPMAN, M. D.,
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CASE VII.* *Fracture of the Cranium and laceration of the Dura Mater, with loss of a portion of Cerebral Substance—Operation—Recovery.*—Miles G. Hopkins, æstat. 7, of this town, was kicked by a horse May 12, 1839. The toe cork hit him beneath the eye on the right side of the face, cutting to the bone, while the heel cork struck him upon the left side of the frontal bone, one inch and a half above the supereiliary ridge. He was taken up entirely insensible, and carried into the house. Dr. John B. Benton first saw him, and when I arrived an hour or more had elapsed: at this time he had partially regained his senses; had vomited once. There was

* The first six cases were published in the preceding No. of this Journal. Those here related did not reach us in time for insertion with the others.—ED.

a small wound in the scalp where the cork entered, which was filled with coagula and brain, which gushed out when the patient struggled, while I was making an examination of the wound. With a bistoury I enlarged the wound in the scalp in two directions upwards, in the form of a letter V, and raised the triangular flap. This gave an opportunity for raising the bone which was fractured and comminuted. The dura mater was lacerated and the bone extensively depressed. Twelve pieces of loose bone were removed with the forceps, and the depressed edges of several others raised to their proper level with the elevator. There was much hemorrhage during the operation from the lacerated vessels of the brain and dura mater, nor did it cease until the scalp was laid down and the dressings applied: there was also some escape of portions of cerebral substance, in all perhaps two tea-spoonfuls. The patient was now cold; the countenance livid, respiration was performed with difficulty, pulse scarcely perceptible. He was placed in bed, some warm wine given him, bottles of hot water to his extremities, and sinapisms of mustard to his wrists and ankles. This was at 5 o'clock, P. M.; at 12 some slight reaction, but his sleep was profound with laborious respiration.

13th. Reaction has taken place, with a quick hard pulse, hot dry skin, eyes much swollen and ecchymosed, pupils contracted. Rational, answers questions, complains of much pain in the forehead. Bleed him 5x, gave a cathartic of jalap, which operated freely in the course of the day.

14th. Less fever than yesterday, but more swelling of the face and eyes; is rational; severe pain in the head, which is very hot; pupils cannot be examined from ecchymosis of lids. Antimonials, with cold applications to the forehead.

15th. But little fever, yet complains incessantly of the pain in the head; face and eyes much swollen. Apply blister to nape of the neck, cath. of ol. ricini, continue cold applications to the head.

16th. No fever, but swelling of face and eyes continues; calls for food; his diet thus far has been gruel.

17th. Is clamorous for food, wishes to sit up; but the erect position causes nausea and dizziness; swelling of the face subsiding; and a profuse discharge from beneath the dressings.

18th. Sat up a while in bed, is playful; calls for food; from this time, nothing peculiar occurred, he improved rapidly, the wound was dressed on the tenth day from the injury; a profuse suppuration continued three weeks, when the wound healed, and the patient was apparently as well as before the accident, and continued so until the 15th of August following, when he was struck with the tongue of a hand sleigh with which he was playing, directly upon the cicatrix, tearing it completely open and causing a profuse hemorrhage; it did not however lay him up at the time, but ten days afterwards he was seized with a powerful rigor, which lasted two hours followed by violent reaction, and profound coma; the pupils were fully dilated and

insensible to the stimulus of light, slow pulse, and laborious respiration. I bled him $\frac{3}{4}$ xv, gave a cath. calnnel and jalap, cold to the head and sinapisms to the extremities. In the course of the night the urine and faeces passed off involuntarily, nor could he be roused to consciousness. The next day there was less fever, but he was delirious, with picking at the bed-clothes and jactitation, the pupils continued dilated, the wound on the head discharged a thin unhealthy saries, with a puffy swelling of the scalp. A large blister was applied between the shoulders, and smaller ones to the calves of the legs. On the day following there was some improvement in the general symptoms, was more rational, and from this time the amendment was gradual. A more healthy suppuration took place in the wound, which did not heal entirely until December, during which time several small scales of bone exfoliated and discharged; he has had no relapses since, has grown finely, attends school, improves in his studies equally well as before the accident, nor does his intellect appear to have suffered in the least.

I have since remarked some phenomena in this case, which are somewhat interesting in a physiological point of view. There is a complete obliteration of the sense of smell in the left nostril, the most pungent odours cannot be recognised when the right nostril is closed and held to the left; yet the sense of touch is as perfect as in the other. By placing the finger on the cicatrix violent spasmodic twitchings of the eyelids immediately take place, which continues as long as the pressure is applied. This was a case where the injury was of a local nature extending but a short distance from the parts immediately wounded. There was undoubtedly considerable inflammation following the injury, but this too was of a local character, involving the tissues to a very limited extent; the suppuration which was profuse, found a ready outlet from the free opening in the cranium. These circumstances, together with the age and excellent constitution of the patient, account for the speedy and perfect recovery which followed.

The second injury must have broken off some small fragments from the edges of the fractured bones, as their subsequent exfoliation clearly indicated.

CASE VIII. *Fracture with depression—laceration of dura mater—Trephining—Recovery.*—Thomas Parker, of Marathon, in this county, wstat. 22 years, while chopping wood, was struck by a large limb, which fell a distance of forty feet, upon the right side of the head; he was found a few minutes afterwards in an insensible state, and continued so while he was conveyed home, a distance of 150 rods; this was at three o'clock P. M., April 7, 1840. Soon after he was carried home he began to show signs of returning consciousness, vomited freely several times, conversed rationally with his friends, but soon relapsed into an insensible state. Dr. Barnes was called, who bled him a small quantity. I saw him at eleven P. M., eight hours from the time of the accident; he had been comatose six hours, with sterorous breathing, cold extremities, and slow pulse. By violent shaking

he could be roused to partial consciousness, but immediately relapsed into stupor. On examining the wound found an irregularly contused and lacerated wound of the scalp over the posterior and upper portion of the right parietal bone. The scalp was much tumefied and infiltrated for some distance around the injury, the face was swollen and ecchymosed, so much as to close the eyes. As the laceration of the scalp did not admit of examining the state of the cranium with facility, an incision was made uniting in one continuous wound several ragged openings, which were in a line with each other. This was nearly in a straight line and parallel with the sagittal suture forwards towards the os frontis. At the bottom of the wound three fissures were discovered, one which appeared wider than the rest traversed the bone diagonally downwards and forwards, towards the temporal ridge, the fissure growing wider as it advanced; posterior it did not extend into the lambdoidal suture. The two other fissures were not more than an inch in length extending from the principal fissure upwards and forwards towards the other side of the head. The portion included between these two was much depressed. As the symptoms of compression were urgent, I applied a small sized trephine near the angle where the two fissures met. On removing the trephine the external table came away in the hollow of the instrument; on examining the inner table it appeared detached and loose, and pressure caused it to sink upon the dura mater. The instrument was applied a second time to the other angle of the fracture, and the outer table removed as before; then with the elevator the depressed bone was restored to its proper level, and a portion which was loose removed. This enabled me with the forceps to remove the detached portion of the inner table, which was an inch long and ten lines broad; beneath this was a coagula an inch broad, and two lines in thickness, which was also removed. Another small piece of the inner table was found loose, and carefully removed from beneath the piece from which it was detached. The fissure that extended towards the temporal bone was next examined. It was separated so as to admit the blunt end of a probe with blood oozing from it, and a laceration of the dura mater was discovered, commencing where the trephine was first applied, extending along immediately below the fracture as far as could be prudently examined. As the fracture extended towards the temporal bone it became more widely separated, and the hemorrhage from this opening was very profuse. The patient had been nearly insensible until the removal of the bones and coagula, when he became sufficiently roused to speak, appeared rational for a short time, but soon fell into a dozing state, from which however he was easily roused. The wound was now dressed by bringing the flaps together, and retained by adhesive plaster, with a night-cap upon his head which was elevated, sinapisms to his extremities, with bottles of hot water to his feet. In the course of an hour his pulse became very rapid and weak, 140 per minute, the surface was cold, with a pale sunken countenance. This continued until four P. M. twenty-five hours

after the accident: after this, partial reaction came on with stupor and delirium.

8th. A cathartic of calomel and jalap was given which operated freely in the course of the day.

9th. Reaction came on, with a pretty strong pulse, with heat of skin and flushed countenance; eyes closed from ecchymosis into the lids; frequently starts; is restless with delirium; venesection to $\frac{3}{2}$ xx, cold ice water to head, antimonials, gruel for diet.

10th. Continues in nearly the same state, gave a cathartic of calomel, followed by ol. ricini, epispastic to the back of the neck.

11th. Much fever with delirium; restlessness, hot skin, quick hard pulse, wound discharges freely. Venesection $\frac{3}{2}$ xvi; calomel gr. ii, ipecac. gr. iii, to be given every two hours, solution of tart. ant., crem. tart., with gruel for diet, blisters to the calves of the legs, continued cold applications to head.

12th. Calomel acted freely on the bowels, blisters drew well: yet the febrile action runs high, delirium continues, suppuration from wound so profuse as to loosen the adhesive plaster; continue calomel and ipecac.

13th. Less fever, is greatly disturbed by noises, eyes closed by the ecchymosis, delirium with startings continue; continue the same medicines, epispastics to the arms.

14th. Less fever, but is still delirious; restless; pulse not as frequent; bowels act freely from the calomel and ipecac. Continue the same treatment.

15th. Delirium continues, but the fever is daily diminishing; ecchymosis about the face and eyelids subsiding; pupils strongly contracted; blisters discharge profusely; wound suppurates freely. Continue the antiphlogistic regimen.

16th. Fever still diminishing; delirium continues; is impatient of light and noise; tries to get out of bed; pulls the dressings from his head. Apply a large blister between the shoulders: cathartic of sulphate of magnesia.

17th. Is more calm and quiet; but little fever; answers questions rationally; bowels moved freely through the night; blister drew well.

18th. But little fever; is rational; inquires for the first time for food; his gums are a little swollen, and a mercurial odour is perceptible in his breath; wound dressed and cleansed for the first time; has united, except a small portion from which a copious discharge of pus issues; says he has no recollection of anything which has transpired since the day he was injured.

The patient recovered his health perfectly without any other bad symptoms, and is at this time, (more than a year from the accident,) as well as usual.

In this case we had a strongly marked one of compression following a period of concussion. The short interval of consciousness immediately followed by stupor, rendered the diagnosis sufficiently obvious. The termination of the case was fortunate, as the nature of the injury led us to apprehend effusion not only under the immediate seat of the injury, but also at

the base of the brain. The inflammation which followed was severe, but a perseverance in the antiphlogistic course arrested it.

CASE IX. *Fracture of Skull by bursting of a gun—Death.*—Lewis Crane, ætat. 21, of Solon, while engaged in *waking up officers* at McGranville in this county, on the morning of the 9th of September 1840, burst his musket, and a large fragment of the barrel struck him on the left side of the head, at the outer angle of the superciliary ridge, lacerating the scalp, and breaking the skull obliquely upwards, and towards the right side for more than six inches in length. I saw him three hours after the accident. Dr. Wiggins of McGranville was in attendance, and had removed several pieces of bone, including some small fragments of the orbital plates.

The patient at this time was sensible, answered questions when spoken to, but was rather obtuse in his faculties.

On examining the wound found the skull extensively denuded of scalp, and a fracture extending from the outer angle of the superciliary ridge upwards and towards the right side for the distance six or seven inches. There were two other fissures which were irregular in their direction, one passing toward the temporal bone, and the other to the right. There was much depression of the bone, and the edges of the fracture overlapped each other.

From the lower part of the wound several loose fragments of bone were taken away with the forceps. One piece included most of the superciliary ridge and a portion of the orbital process of the frontal bone. On tracing the fracture upwards, it was ascertained that some portions of the inner table of the bone were detached and lying loose upon the dura mater. And as they could not be extracted without fear of lacerating the dura mater, the trephine was applied near the coronal suture over the fracture, and a disc of the outer table removed. From this opening two loose fragments were extracted more than an inch in length and half an inch in breadth.

The depressed edges of the fracture were elevated to their proper level, the wound sponged, and the irregularly torn and lacerated scalp laid down as accurately as possible, and one or two sutures to retain the angles; adhesive plasters and a nightcap completed the dressings. The patient was completely sensible of the operation; the pulse was calm and regular. A profuse warm perspiration broke out, and he expressed himself as comfortable. Arrangements were now made to transport him to his father's residence, (a distance of three miles,) and while placing him in the carriage on a bed, he vomited freely, for the first time, and this was repeated several times while being carried home. The perspiration continued profuse until midnight when reaction came on with a hot dry skin, strong and hard pulse. Dr. Wiggins saw him at one o'clock A. M. on the 10th, and bled him 32 ounces, gave a cathartic of calomel and jalap, which operated freely in the evening. At six P. M., my partner, Dr. Daniel Havens, saw him in company with Dr. Wiggins; reaction was high; pulse strong and hard, with

much heat of skin; considerable stupor, but answers questions readily when spoken to; complains of his head; is extremely restless. Venesection again to 16 ounces; antimonials and saline medicines freely; cold applications to the head, and sinapisms to the extremities.

11th. Morning.—Delirium with complete hemiplegia of the right side, and constant motion of the left; will answer questions rationally when roused; much fever, skin hot and dry; pulse frequent and weak. A free and profuse suppuration has taken place in the wound. Evening.—Fever continues; delirium and stertorous breathing.

12th. Morning.—Complete dilatation of the right pupil, and contraction of the left; stupor; coma; constant motion of the left side; pulse weak and rapid. Death at one o'clock P. M.

Post mortem by Dr. Wiggins.—As the friends of the young man were not willing that a thorough examination should be made, the doctor merely examined from the wound, which was sufficiently extensive to observe probably all the morbid changes which had taken place. He found that a fissure had extended into the temporal bone, and also into the parietal, and far back into the orbital processes of the frontal.

The *dura mater* was highly inflamed, particularly near the lower part of the wound, and was very red and vascular as far as could be seen. On laying the membranes open, pus well formed flowed out to the amount of a wineglassful or more, mixed with portions of softened and disorganized brain. No effused blood was found above or beneath the *dura mater*. All the anterior and left lobe of the cerebrum appeared broken down into a soft and disorganized mass mixed with purulent matter.

The early period at which inflammation developed itself in this case, and the rapidity with which it took on the suppurative process was somewhat peculiar. Great injury was undoubtedly done to the cerebral substance beneath the membranes at the time of the accident; and it is somewhat surprising that no effused blood was the result of such severe contusion. Paralysis came on in about 48 hours from the time he was wounded, and no doubt arising from suppuration and disorganization of the brain, the result of inflammation. Reaction came on within 24 hours with well defined symptoms of inflammation, and in less than 24 hours more it is probable suppuration had taken place with a rapidity of action not to be anticipated. The symptoms were promptly met at their first appearance by copious depletion and other antiphlogistic measures, but without the least apparent mitigation of their violence. The period at which inflammation supervenes upon injuries of the head is extremely varied, and their progress and termination also differ as widely. We see in case first (that of Fox,) a severe organic lesion of the membranes and substance of the brain followed by no signs of inflammation, as the *autopsy* verified. So also in case eight, (that of Thomas Parker,) inflammation was developed early, but it was probably confined to the meninges of the brain.

CORTLANDVILLE, June 8th, 1841.